

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN THAT I, TAKANORI FUJII, a citizen of Japan residing at Kanagawa, Japan have invented certain new and useful improvements in

FACSIMILE APPARATUS

of which the following is a specification:-

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a facsimile apparatus, and more particularly, to a facsimile apparatus that easily obtains accurate reception capacity information of each transmission destination, and performs accurate and efficient facsimile transmission of e-mail image files through a network.

2. Description of the Related Art

Conventionally, a facsimile apparatus has been used in a stand-alone state in which the apparatus operates independently, and conventional facsimile communication procedures (transmission procedures) have been set in accordance with the ITU (International Telecommunication Union)-T recommendation T.30.

In the general G3/G4 facsimile communication procedures, function exchange among G3 DIS/DCS signals or G4 CSS/RSSP signals is carried out at the time of transmission, so that the function having the highest possible communication speed that can be accepted on the receiving end can be used for transmission. The function is stored in the apparatus, and is reused for the next transmitting operations to the same receiving end.

As the performance of each apparatus has advanced and the communication networks have developed in recent years, facsimile apparatuses having functions of transmitting and receiving image information to and from other apparatuses via a network such as the Internet have been produced (see Japanese Laid-Open Patent Application Nos. 2000-332940, 2001-265675, 2002-199198, 2000-183949, 2001-203847, and 2002-218152).

Such facsimile apparatuses that perform communications via a network utilize the ITU-T recommendation T.37 simple-mode, as disclosed in Japanese Laid-Open Patent Application No. 2002-252736.

In any of the above facsimile apparatuses, however, the ITU-T recommendation T.37 simple-mode utilizing a network (the Internet) is employed. With any of those conventional facsimile apparatuses, image data (image file) transmission can be carried out via the Internet, but the function of the transmission destination cannot be ascertained before the facsimile communication via the Internet. This is the problem with those conventional network facsimile apparatuses.

The ITU-T recommendation T.37 simple-mode employed by the conventional facsimile apparatuses

utilizing the Internet does not include a capacity negotiating procedure, and therefore, transmission and reception are generally carried out with the default parameters (A4/200 dpi or 200×100 dpi/MH).

5 More specifically, the facsimile apparatus on the transmitting end cannot determine the functions of a transmission destination apparatus. Even if the apparatus on the receiving end has a function that is compatible with a compression method
10 such as MMR (Modified MR) or JBIG (Joint Binary Image Group), each transmitting operation includes a process of compressing an image file by the MH (modified Huffman) method, which is the default compressing mode. This causes inconvenience in
15 facsimile communications. As transmission is always carried out in the default compressing mode, the amount of transmission data increases, and the load on the network also increases. This also causes longer communications times with Internet providers,
20 resulting in higher communications costs.

 On the other hand, the ITU-T recommendation T.37 full-mode can provide a function of sending delivery confirmation mail to notify a facsimile apparatus on the transmitting end of the reception
25 capacity on the receiving end. In this case, the

facsimile apparatus on the transmitting end needs to have a function of storing the reception capacity information of each facsimile apparatus serving as a transmission destination. Storing of the reception capacity information can be carried out through an operation by a user.

However, if the facsimile apparatus on the receiving end does not show (provide) the reception capacity information in the delivery confirmation mail, the ITU-T recommendation T.37 full-mode function of the facsimile apparatus on the transmitting end cannot be fully utilized. In such a case, transmission is carried out only with the default parameters, unless a user expands the settings.

SUMMARY OF THE INVENTION

A general object of the present invention is to provide a facsimile apparatus in which the above disadvantages are eliminated.

A more specific object of the present invention is to provide a facsimile apparatus that performs facsimile transmission to another facsimile apparatus not having a reception capacity notifying function without a user taking the trouble to carry

out a registering process, utilizing an advanced
function equivalent to the ITU-T recommendation T.37
full-mode function. Such a facsimile apparatus fully
utilizes the capacity provided therein, and increases
5 the usability.

Another specific object of the present
invention is to provide a facsimile apparatus that is
connected to a network and has an ITU-T
recommendation T.37 full-mode function for facsimile
10 transmission of an image file processed by an image
processor using parameters corresponding to a
transmission mode, at least with a delivery
confirmation request being attached to the image file,
the facsimile transmission being carried out via the
15 network. In this facsimile apparatus, a destination
information memory stores reception capacity
information of a selected transmission destination or
reception capacity information of the selected
transmission destination contained in delivery
20 confirmation mail sent from the selected transmission
destination, the reception capacity information being
associated with the mail address of the selected
transmission destination. A controller causes a
transmission mode memory to store the transmission
25 mode used for the facsimile transmission accompanied

by the delivery confirmation request. If the delivery confirmation mail from the selected transmission destination contains reception capacity information, the controller causes the destination information memory to store the reception capacity information as the reception capacity information of the selected transmission destination. If the delivery confirmation mail does not contain the reception capacity information but confirms that the communication has been properly completed, the controller causes the destination information memory to store the transmission mode, already stored in the transmission mode memory, as a transmission enabling mode of the selected transmission destination.

15 Achieving the usability equivalent to the ITU-T recommendation T.37 full-mode, this facsimile apparatus can readily and accurately obtain the reception capacity information of each transmission destination that does not have the function of providing the reception capacity information through the delivery confirmation mail. Thus, accurate and efficient facsimile transmission of image files can be carried out via a network.

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Yet another specific object of the present invention is to provide a facsimile apparatus having

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a controller that causes the destination information memory to store the transmission mode, which has already been stored in the transmission mode memory, as a transmission disabling mode of the selected
5 transmission destination, when the delivery confirmation mail sent from the selected transmission destination does not contain the reception capacity information but confirms that the communication failed. With this structure, facsimile transmission
10 in an unusable communication mode can be avoided, and more accurate and efficient facsimile transmission of image files can be carried out via a network.

Still another specific object of the present invention is to provide a facsimile apparatus having
15 a controller that causes an image memory to keep an image file for transmission until the delivery confirmation mail is sent from the selected transmission destination, when the image file that has been processed by the image processor using
20 parameters different from default parameters is facsimile-transmitted at least together with a delivery confirmation request. When delivery confirmation mail is received from the selected transmission destination reporting that the
25 communication failed, the image processor converts

the image file kept in the image memory into an image file corresponding to the default parameters, and the converted image file is facsimile-transmitted again to the selected transmission destination. In this manner, image files that have once failed to be transmitted can be resent in suitable states. Thus, more accurate and more efficient facsimile transmission of image files can be carried out via a network.

10 The above objects of the present invention are achieved by a facsimile apparatus that is connected to a network and has an ITU-T recommendation T.37 full-mode function for facsimile transmission of an image file processed by an image processor using parameters corresponding to a transmission mode, at least with a delivery confirmation request being attached to the image file, the facsimile transmission being carried out via the network. This facsimile apparatus includes: a
15 destination information memory that stores reception capacity information of a selected transmission destination or reception capacity information of the selected transmission destination contained in delivery confirmation mail sent from the selected
20 transmission destination, the reception capacity
25

information being associated with the mail address of the selected transmission destination; a transmission mode memory that stores a transmission mode used for facsimile transmission accompanied at least by the
5 delivery confirmation request; and a controller that causes the transmission mode memory to store the transmission mode used for the facsimile transmission with the delivery confirmation request, causes the destination information memory to store reception
10 capacity information contained in the delivery confirmation mail sent from the selected transmission destination, the reception capacity information being stored as the reception capacity information of the selected transmission destination, and causes the
15 destination information memory to store the transmission mode, already stored in the transmission mode memory, as a transmission enabling mode of the selected transmission destination when the delivery confirmation mail does not contain the reception
20 capacity information but confirms that the communication has been properly completed.

With the above structure, a facsimile apparatus that is connected to a network and has an ITU-T recommendation T.37 full-mode function for
25 facsimile-transmitting an image file processed by an

image processor using parameters corresponding to a transmission mode is obtained. In the facsimile transmission, at least a delivery confirmation request is attached to the image file, and the

5 facsimile transmission is carried out via the network. Also in the facsimile apparatus, a destination information memory stores reception capacity information of a selected transmission destination or reception capacity information of the selected

10 transmission destination contained in delivery confirmation mail sent from the selected transmission destination, the reception capacity information being associated with the mail address of the selected transmission destination. A controller causes a

15 transmission mode memory to store the transmission mode used for the facsimile transmission accompanied by the delivery confirmation request. If the delivery confirmation mail from the transmission destination contains reception capacity information,

20 the controller causes the destination information memory to store the reception capacity information as the reception capacity information of the transmission destination. If the delivery confirmation mail does not contain the reception

25 capacity information but confirms that the

communication has been properly completed, the controller causes the destination information memory to store the transmission mode, already stored in the transmission mode memory, as a transmission enabling
5 mode of the selected transmission destination.

Achieving usability equivalent to the ITU-T recommendation T.37 full-mode, this facsimile apparatus can readily and accurately obtain the reception capacity information of each transmission
10 destination that does not have the function of providing the reception capacity information through the delivery confirmation mail. Thus, accurate and efficient facsimile transmission of image files can be carried out via a network.

15 In the above facsimile apparatus, the controller may cause the destination information memory to store the transmission mode, which has already been stored in the transmission mode memory, as a transmission disabling mode of the selected
20 transmission destination, when the delivery confirmation mail sent from the selected transmission destination does not contain the reception capacity information but confirms that the communication failed.

25 With the above structure, when the delivery

confirmation mail sent from the selected transmission destination does not contain the reception capacity information but confirms that the communication failed, the controller causes the destination

5 information memory to store the transmission mode, which has already been stored in the transmission mode memory, as a transmission disabling mode of the selected transmission destination. With this structure, facsimile transmission in an unusable
10 communication mode can be avoided, and more accurate and efficient facsimile transmission of image files can be carried out via a network.

The above facsimile apparatus may further include an image memory that stores image files for
15 transmission. In this facsimile apparatus, when an image file that has been processed by the image processor using parameters different from default parameters is facsimile-transmitted at least together with the delivery confirmation request, the
20 controller keeps the image file in the image memory until the delivery confirmation mail is sent from the selected transmission destination. When delivery confirmation mail is sent from the selected transmission destination reporting that the
25 communication failed, the image processor converts

the image file kept in the image memory into an image file corresponding to the default parameters, and the converted image file is facsimile-transmitted again to the selected transmission destination.

5 With the above structure, the controller causes the image memory to keep an image file for transmission until the delivery confirmation mail is sent from the selected transmission destination, when the image file that has been processed by the image
10 processor using parameters different from default parameters is facsimile-transmitted at least together with a delivery confirmation request. When delivery confirmation mail is received from the selected transmission destination reporting that the
15 communication failed, the image processor converts the image file kept in the image memory into an image file corresponding to the default parameters, and the converted image file is facsimile-transmitted again to the selected transmission destination. In this
20 manner, image files that have once failed to be transmitted can be resent in suitable states. Thus, more accurate and more efficient facsimile transmission of image files can be carried out via a network.

25 The above and other objects, features, and

advantages of the present invention will become more apparent from the following detailed description taken in conjunction with the accompanying drawings.

5 BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram illustrating the structure of a facsimile apparatus in accordance with one embodiment of the present invention;

Fig. 2 is a block diagram illustrating the
10 functions of the facsimile apparatus shown in Fig. 1;
and

Fig. 3 is a flowchart showing a
communication controlling operation involving a
destination information managing process to be
15 performed by the facsimile apparatus shown in Fig. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The following is a description of
embodiments of the present invention, with reference
20 to the accompanying drawings.

Figs. 1 through 3 illustrate one embodiment
of a facsimile apparatus in accordance with the
present invention. Fig. 1 is a block diagram
illustrating the structure of a facsimile apparatus 1
25 in accordance with the present invention.

In Fig. 1, the facsimile apparatus 1 includes a main controlling unit 2, a scanner 3, a plotter 4, an operations unit 5, a display unit 6, a memory unit 7, a communication controlling unit 8, a DCR (coding/decoding) 9, and a LAN communication controlling unit 10. These components are connected to each another by a bus 11.

The scanner 3 may be a line image sensor equipped with a CCD (Charge Coupled Device), for example, and includes an ADF. Documents are set on the ADF, which feeds the documents, one by one, to the document reading position of the scanner 3. The scanner 3 scans each document transported from the ADF, and reads in the image of each document with a predetermined resolution.

The plotter 4 may be a thermal recording device, an electrophotographic recording device, or an inkjet recording device, for example. The plotter 4 records received images and the image of each document read by the scanner 3 on recording sheets. The plotter 4 also records various reports on recording sheets.

The operations unit 5 includes operation keys such as a numeric keypad and a start key, function keys, and menu keys. The operations unit 5

further includes a display such as a liquid crystal display, for example. Through the operation keys of the operations unit 5, telephone numbers and mail addresses of transmission destinations are

5 transmitted, various information items such as the reception capacities of transmission destinations are input, and various commands and instructions are also input. The contents of instructions and operations input through the operation keys and the menu keys,
10 and various information items sent from the facsimile apparatus 1 to operators are displayed on the display.

The memory unit 7 (a destination information memory, a transmission mode memory, and an image memory) may be a RAM (Random Access Memory) or a hard
15 disk. The memory unit 7 stores image data such as transmission image information and reception image information, dial information such as the telephone numbers of recorded transmission destinations, the telephone numbers and the names of transmission
20 destinations associated with one-touch dialing and abbreviated dialing, own information such as the telephone number and the name of the apparatus, read density information, and record density information. The memory unit 7 also stores the telephone numbers
25 of transmission destinations for facsimile

communications through a network (the Internet) in association with the mail addresses of the transmission destinations. The memory unit 7 further stores the transmission destinations associated with
5 destination information of the transmission destination, such as reception capacity information, transmission modes, transmission enabling modes, and transmission disabling modes. The destination information can be added to, altered, or deleted from,
10 through a key operation using the operations unit 5.

The communication controlling unit 8 is connected to a public line or a private line such as the PSTN (Public Switched Telephone Network) or the ISDN (Integrated Services Digital Network). The
15 communication controlling unit 8 performs automatic call and answer operations, and modulation and demodulation through a built-in data modem.

The DCR 9 (an image processor) encodes image data by various encoding methods, such as the MR
20 (Modified Relative element address designate) encoding method, the MMR (Modified MR) encoding method, the standard MH method, and the JBIG method. The DCR 9 also decodes the encoded image data.

The LAN communication controlling unit 10
25 may be connected to a network such as a LAN (Local

Area Network) that is connected to a public line. Alternatively, the LAN communication controlling unit 10 may be connected directly to a public line such as the PSTN or ISDN. The LAN communication controlling unit 10 controls protocols such as TCP/IP, PPP (Point to Point Protocol), and SMTP (Simple Mail Transfer Protocol)/POP (Post Office Protocol), thereby receiving electronic mail transmitted through the LAN or a public line, and sending electronic mail to transmission destinations.

More specifically, the LAN communication controlling unit 10 has a T.37 full-mode communication function. Accordingly, the LAN communication controlling unit 10 is capable of performing transmission together with a delivery confirmation request, and receives delivery confirmation mail from the transmission destination in response to the delivery confirmation request. The facsimile apparatus on the receiving end can add reception result information and the reception capacity information (reception function information) of the receiving end to the delivery confirmation mail. With the reception result information, the facsimile apparatus on the receiving end notifies the transmitting end whether facsimile reception has been

properly completed. The reception result information serves as transmission result information on the transmitting end.

The main controlling unit 2 (a controller) includes a ROM (Read Only Memory), a RAM, and a CPU (Central Processing Unit). The ROM stores various programs such as a basic operation program of the facsimile apparatus 1 and a destination information managing program (described later), and various data such as system data that are essential for executing each program. In accordance with the programs stored in the ROM, the CPU of the main controlling unit 2 utilizes the RAM as a work memory to control each component of the facsimile apparatus 1. In this manner, the main controlling unit 2 performs basic operations of the facsimile apparatus 1, and also performs a destination information managing operation that is described below.

The facsimile apparatus 1 has functions as shown in Fig. 2. More specifically, the facsimile apparatus 1 includes a controlling function 21, an image storing function 22, a destination information storing function 23, a transmission mode storing function 24, an image processing function 25, a network facsimile transmitting/receiving function 26,

a transmission mode determining function 27, and a response mail reading function 28. Using the ITU-T recommendation T.37 full-mode, the facsimile apparatus 1 transmits image data in a suitable transmission mode for the capacity of the transmission destination.

The controlling function 21, the transmission mode determining function 27, and the response mail reading function 28 are embodied by the main controlling unit 2. The image storing function 22, the destination information storing function 23, and the transmission mode storing function 24 are embodied by the memory unit 7. The image processing function 25 is embodied by the DCR 9. The network facsimile transmitting/receiving function 26 is embodied by the LAN communication controlling unit 10.

More specifically, the image storing function 22 stores transmission image data as image files, under the control of the controlling function 21. The destination information storing function 23 stores the reception capacity information of transmission destinations associated with the mail addresses of the transmission destinations. The reception capacity information of each transmission destination is set through the operations unit 5 or

received through the delivery confirmation mail from
each transmission destination. The destination
information storing function 23 also stores the
transmission enabling mode of each transmission
5 destination.

The image processing function 25 performs
image processing on the image data in the
transmission files under the control of the
controlling function 21, using parameters in
10 accordance with the transmission mode.

The network facsimile transmitting/receiving
function 26 transmits and receives through a network
the image files, which have been processed by the
image processing function 25 with the parameters
15 according to the transmission mode, under the control
of the controlling function 21. The network
facsimile transmitting/receiving function 26 also has
the ITU-T recommendation T.37 full-mode function that
carries out facsimile transmission and reception
20 through a network, with delivery confirmation
requests to the transmission destinations being added
to the transmission.

The transmission mode determining function
27 determines the transmission mode for facsimile
25 transmission under the control of the controlling

function 21. The response mail reading function 28
decodes the delivery confirmation mail received by
the network facsimile transmitting/receiving function
26, and notifies the controlling function 21 of the
5 contents of the delivery confirmation mail.

The transmission mode storing function 24
stores the transmission mode, under the control of
the controlling function 21, at the time of facsimile
transmission accompanied by a delivery confirmation
10 request.

The controlling function 21 stores the
transmission mode in the mode storing function 24 at
the time of facsimile transmission accompanied by a
delivery confirmation request. After the reception
15 capacity information is sent from the transmission
destination through the delivery confirmation mail,
and the response mail reading function 28 decodes the
reception capacity information, the reception
capacity information is stored as the reception
20 capacity information of the transmission destination
in the destination information storing function 23.
Even if the reception capacity is not included in the
delivery confirmation mail, the response mail reading
function 29 reads from the delivery confirmation mail
25 whether the communication went well. If the

communication result is good, the response mail
reading function 28 sets the transmission mode that
has already been stored in the transmission mode
storing function 24 as the transmission enabling mode
5 of the transmission destination in the destination
information storing function 23. In a case where the
reception capacity information is not contained in
the delivery confirmation mail from the transmission
destination, and the response mail reading function
10 28 reads from the delivery confirmation mail that the
communication failed, the controlling function 21
sets the transmission mode that has already been
stored in the transmission mode storing function 24
as the transmission disabling mode of the
15 transmission destination in the destination
information storing function 23. Further, each time
facsimile transmission accompanied by a delivery
confirmation request is carried out, the controlling
function 21 stores the image file of the facsimile
20 transmission in the image storing function 22. In a
case where an image file that has been processed by
the image processing function 25 with parameters
different from the default parameters is transmitted
in the facsimile transmission, the controlling
25 function 21 keeps the image file in the image storing

function 22 until delivery confirmation mail is received from the transmission destination. When delivery confirmation mail indicating that the communication result is not good is received from the transmission destination, the image processing function 25 converts the image data stored in the image storing function 22 into an image corresponding to the default parameters. The network facsimile transmitting/receiving function 26 then facsimile-transmits the converted image again to the transmission destination.

Referring now to Fig. 3, the operation of this embodiment is next described. The facsimile apparatus 1 is characterized by transmitting image data in a suitable mode for the reading mode of the original document and the reception capacity of the transmission destination, utilizing the ITU-T recommendation T.37 full-mode.

In the facsimile apparatus 1, one of the transmission destinations having its mail addresses stored in the destination information storing function 23 of the memory unit 7 is first selected through a one-touch button or the like on the operations unit 5, and transmission to the selected transmission destination is carried out by the

operations unit 5 (step S101). The transmission mode determining function 27 of the main controlling unit 2 then determines the document reading mode used by the scanner 3, which is the transmission mode. The
5 determined transmission mode is stored in the transmission mode storing function 24 of the memory unit 7. The main controlling unit 2 then determines whether the reading mode (transmission mode) is the reading mode (transmission mode) corresponding to the
10 default parameters (step S102). If the reading mode is determined to be the transmission mode corresponding to the default parameters, the image file of the image data read from the document with the scanner 3 is stored in the image storing function
15 22 of the memory unit 7, and the image file is then transmitted through a regular facsimile transmitting process (step S103). After the facsimile transmission is completed, the image file is deleted from the memory unit 7 (step S109), and the operation
20 comes to an end.

If the transmission mode is determined not to be the transmission mode corresponding to the default parameters in step S102, the main controlling unit 2 determines whether the transmission mode is
25 set as a transmission disabling mode of the selected

transmission destination stored in the destination
information storing function 23 (step S104). If the
transmission mode is a transmission enabling
(allowing) mode, the regular transmission is carried
5 out, and the image file is deleted from the memory
unit 7 (step S109). The operation then comes to an
end.

If the transmission mode is set as neither a
transmission disabling mode nor a transmission
10 enabling mode of the selected transmission
destination stored in the destination information
storing function 23 of the memory unit 7 in step S104,
the main controlling unit 2 stores the image file
read from the document with the scanner 3 in the
15 image storing function 22 of the memory unit 7, and
adds a delivery confirmation request to the image
file. The LAN communication controlling unit 10 then
facsimile-transmits the image file accompanied by the
delivery confirmation request to the selected
20 transmission destination (step S105).

After the facsimile transmission accompanied
by the delivery confirmation request is completed,
the main controlling unit 2 waits for the LAN
communication controlling unit 10 to receive delivery
25 confirmation mail from the selected transmission

destination (step S106). The main controlling unit 2 then determines whether the transmission result is good based on the read result from the response mail reading function 28 (step S107).

5 If the transmission result is determined to be good in step S107, the main controlling unit 2 sets the transmission mode, which has already been stored in the transmission mode storing function 24 of the memory unit 7, as the transmission enabling
10 mode for the destination information of the selected transmission destination stored in the destination information storing function 23 of the memory unit 7 (step S108). The image file is then deleted from the memory unit 7 (step S109), and the operation comes to
15 an end.

 If the transmission result is not good in step S107, the main controlling unit 2 sets the transmission mode, which has already been stored in the transmission mode storing function 24 of the
20 memory unit 7, as the transmission disabling mode for the destination information of the selected transmission destination stored in the destination information storing function 23 of the memory unit 7 (step S110). The DCR 9 then converts the image file,
25 which has been stored in the image storing function

22 of the memory unit 7 and is to be transmitted to the selected transmission destination, into an image to be transmitted in the transmission mode corresponding to the optimum parameters for the selected transmission destination, such as the transmission mode corresponding to the default parameters (step S111).

After the image converting process is completed, the main controlling unit 2 returns to step S102, and repeats the above procedures. When facsimile transmission is completed properly, the image file that has been transmitted is deleted from the image storing function 22 of the memory unit 7 (step S109). Then the operation then comes to an end.

As described so far, the facsimile apparatus 1 of this embodiment is connected to a network, and has the ITU-T recommendation T.37 full-mode function. The DCR 8 performs image processing on each image file to be transmitted, using parameters corresponding to the transmission mode. A delivery confirmation request is added to each processed image file, the image file accompanied by the delivery confirmation request is facsimile-transmitted from the LAN communication controlling unit 10 to a transmission destination through the network. While

doing so, the facsimile apparatus 1 associates the mail address of the transmission destination with the reception capacity information of the transmission destination set by the operation unit 5 or the

5 reception capacity information of the transmission destination provided through delivery confirmation mail sent from the transmission destination in reply to a delivery confirmation request, and then stores the reception capacity information associated with

10 the mail address in the destination information storing function 23 of the memory unit 7. At the time of facsimile transmission accompanied by a delivery confirmation request, the main controlling unit 2 stores the transmission mode in the

15 transmission mode storing function 24 of the memory unit 7. If reception capacity information of the transmission destination has been sent through delivery confirmation mail from the transmission destination, the main controlling unit 2 stores the

20 reception capacity information as the reception capacity information of the transmission destination in the destination information storing function 23 of the memory unit 7. If reception capacity has not been sent through the delivery confirmation mail, the

25 main controlling unit 2 stores the transmission mode,

which has already been stored in the transmission mode storing function 24 of the memory unit 7, as a transmission enabling mode of the transmission destination in the destination information storing function 23 of the memory unit 7, after the delivery confirmation mail confirms that the communication result is good.

Even in a case where the receiving end does not have a function of notifying the reception capacity information through the delivery confirmation mail, it is possible to achieve usability equivalent to the ITU-T recommendation T.37 full-mode, and to obtain the reception capacity information of the transmission destination with ease and accuracy. Thus, accurate and efficient facsimile transmission of image files can be carried out through a network.

Further, in a case where reception capacity information has not been provided through delivery confirmation mail from the transmission destination after facsimile transmission accompanied by a delivery confirmation request, and where the delivery confirmation mail confirms that the communication failed, the transmission mode that has been stored in the transmission mode storing function 24 of the

memory unit 7 is stored as a transmission disabling mode of the transmission destination in the destination information storing function 23 of the memory unit 7.

5 In this manner, inadvertent facsimile transmission in an unusable communication mode can be prevented, and more accurate and efficient facsimile transmission of image files can be carried out through a network.

10 Further, when an image file that has been processed by the DCR 9 using parameters different from the default parameters is facsimile-transmitted together with a delivery confirmation request, the main controlling unit 2 keeps the image file in the
15 image storing function 22 of the memory unit 7 until delivery confirmation mail from the transmission destination is received. After receiving delivery confirmation mail from the transmission destination confirming that the communication failed, the image
20 file stored in the image storing function 22 of the memory unit 7 is converted into an image file corresponding to the default parameters by the DCR 9. The converted image file is then facsimile-transmitted again to the transmission destination.

25 In this manner, image files that have once

failed to be transmitted can be resent in preferred conditions. Thus, more accurate and efficient facsimile transmission of image files can be carried out through a network.

5 It should be noted that the present invention is not limited to the embodiments specifically disclosed above, but other variations and modifications may be made without departing from the scope of the present invention.

10 This patent application is based on Japanese Priority Patent Application No. 2003-116423, filed on April 22, 2003, the entire contents of which are hereby incorporated by reference.